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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,772	11/09/2001	Keizo Ohta	723-1213	5628

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EXAMINER

PAPPAS, PETER

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,772

Applicant(s)

OHTA, KEIZO

Examiner

Peter-Anthony Pappas

Art Unit

2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 5 and 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
2. In regards to claims 5 and 10 the prior art of record does not disclose or suggest said moving step moving a pasting position of the pattern in a direction reverse to a direction of moving said water surface object by an amount equal to an amount thereof.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 5 and 10 state "...moving said water surface object by an amount equal to an amount thereof" (page 21 and 23 respectively). It is unclear as to what "an amount thereof" represents and how it further defines "by an amount."

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peachey (Modeling Waves and Surf).

7. Peachey teaches a Pyramid 90x computer (image processing apparatus) used for generating (outputting) image data. Said image data consists of water and land surfaces that are considered to exist in virtual space. The Babbage Beach (herein referred to beach) terrain (land object) was rendered as a collection of triangles with the grid points as vertices, wherein said terrain was entered as a coarse grid of manually generated elevations (page 69, section 3.5, ¶ 1-2). It is noted that said beach terrain (portion of land) is considered part of a greater land mass. Models of waves and surf (water surface object) are rendered so to synthesize convincing images of ocean waves as they might be seen on a beach (page 66, section 3, ¶ 1). It is noted that a water surface area defined by the boundaries of said beach terrain and its immediate shore, as illustrated in Figs. 6-7 (page 71), is considered part of a greater mass of water (i.e. ocean).

It would have been obvious to one skill in the art, at the time of the applicant's invention, to model a larger area of land and sea mass, as a given respective object, so to allow for portions of said large area to be isolated for more detailed modeling and to then render and display said portions, because for a given portion of said larger areas the effects generated within said portion (i.e. effects of waves) are indicative of the properties of said larger area (i.e. ocean which the waves are a part) and thus by maintaining such a relationship further accuracy and study of said portion could be achieved.

Peachey teaches a group of waves with a three times larger amplitude break and generate spray when the wavelength is reduced in shallow water (predetermined area dictated by said beach terrain). Said beach terrain and said waves and surf are positioned so that said waves and surf meet said beach, wherein said waves cross said shallow water. See Figs. 6-10.

Peachey teaches a rendered image of said beach terrain without water (Fig. 5). Peachy fails to explicitly disclose a means by which to move the place position of said water surface object so that said position meeting with said land object is changed within said predetermined area.

It would have been obvious to one skilled in the art, at the time of the applicant's invention, to allow for the varying placement and rendering of separated objects in a given scene, within a designated predetermined range, because it is conventional to allow for a objects, not yet rendered, to be repositioned in a scene within the constraints of a range which still allows for the desired end result to still be achieved.

8. In regards to claim 2 Peachey teaches said water surface object makes a curved reciprocating motion (Figs. 6-8).

9. In regards to claim 6 Peachey teaches the rationale disclosed in the rejection of claim 1 is incorporated herein.

10. In regards to claim 7 the rationale disclosed in the rejection of claim 2 is incorporated herein.

11. Claims 3-4 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peachey (Modeling Waves and Surf), as applied to claims 1-2, 6-7, in view of Fournier (A Simple Model of Ocean Waves).

12. In regards to claim 3 Peachey teaches a small plume of spray is produced from the impact of a wave with a pyramid shaped rock obstacle (page 71, section 5, ¶ 1 and page 72, Fig. 8). It is noted that the refraction of the waves from this impact are in an arc, circular in nature, surrounding said obstacle and thus said refraction is considered circular motion. Fournier teaches an overhanging wave (page 8, section 7, ¶ 11 and page 83, Fig. 16). It is noted that the crest of the wave illustrated in Fig. 16 is considered to be circular in nature.

It would have been obvious to one skill in the art, at the time of the applicant's invention, to model and render at least some waves in a given ocean scene having a circular wave crest, because it is conventional for waves to often have such a property in real world environments and as such would lend to more realism during the simulation.

13. In regards to claim 4 Peachey fails to explicitly teach said water surface object has a flat surface on a portion except said predetermined area, the portion not meeting with said land object. Fournier teaches a wave surface object, wherein the breakers crash and the waves lap up on the beach, due to the ocean floor shallowing near shore (page 81, section 7, ¶ 11). It is noted that the portion of said water surface object not interacting directly with said shore is considered to have a flat surface (page 81, Fig. 13).

It would have been obvious to one skilled in the art, at the time of the applicant's invention, that when simulating a beach front, interacting with incoming waves, to restrict the processing required for rendering the scene to the waves closest to the shore which are breaking, washing up on shore, etc. and thus not render the effects of waves (ocean effects) offshore from the beach front, because by doing so would reduce the visual processing demands imposed by such a system, yet still allow for the continued processing of various ocean physic calculations so to allow for the creation of realistic waves hitting the beach front.

14. In regards to claim 8 the rationale disclosed in the rejection of claim 3 is incorporated herein.

15. In regards to claim 9 the rationale disclosed in the rejection of claim 4 is incorporated herein.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Uchi et al. (U.S. Patent No. 6, 483, 520 B1). Uchi et al. teaches an image creating apparatus for rendering a liquid-object model, wherein a rendering processing unit displays the liquid-object model on the display unit by mapping a liquid-object texture onto the polygons of the liquid-object polygon set (column 1, lines 56-67, column 2, lines 1-7).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter-Anthony Pappas whose telephone number is 703-305-8984. The examiner can normally be reached on M-F 9:30am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 703-305-9798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter-Anthony Pappas
Examiner
Art Unit 2671

PAP
3/10/04

A handwritten signature in black ink, appearing to read "Mark Zimmerman", with a long horizontal flourish extending to the right.

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600